

## REMARKS

Claims 1-49 are pending in this application. Claims 1-21 and 36-49 have been withdrawn. Claims 22, 23, 25-27, 29 are canceled herein. New claims 50-61 are added herein to better clarify Applicants' claimed invention.

Independent claim 50 recites a device which includes an enclosure, a heat dissipating component disposed within the enclosure, and a thermally conductive assembly disposed within the enclosure and having a first side and a second side, where the first side is disposed on the heat dissipating component and where the second side is disposed against the enclosure. Support can be found in the Specification at Page 17 / Lines 11-15, and in FIG. 7.

Independent claim 50 further recites a flexible thermally conductive assembly comprising a flexible, thermally conductive elastomeric member, and a polyethylene layer encapsulating said elastomeric member. Support can be found in the Specification at Page 8 / Line 4. Claim 50 further recites a polyethylene layer having a dielectric strength of at least 500 volts per mil. Support can be found in the Specification at Page 8 / Lines 21-23.

Claim 51 depends from claim 50 and recites an device wherein said polyethylene layer prevents release of silicone oils from said thermally conductive assembly. Support can be found in the Specification at Page 7 / Lines 19-21, and in previously presented claim 23.

Claim 52 depends from claim 50 and recites a device further comprising a second encapsulating layer disposed over the polyethylene layer. Support can be found in the Specification at Page 7 / Lines 19-21, and in previously presented claim 24.

Claim 53 depends from claim 52 and recites a device wherein the second encapsulating layer comprises polyethylene terephthalate. Support can be found in the Specification at Page

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7 / Lines 19-21, and in previously presented claims 25 and 26.

Claim 54 depends from claim 52 and recites a device further comprising a metal layer disposed between the polyethylene layer and the elastomeric member. Support can be found in previously presented claim 27.

Claim 55 depends from claim 54 and recites a device wherein the metal layer comprises aluminum. Support can be found in previously presented claim 28.

Claim 56 depends from claim 50 and recites a device further comprising a semi-solid material disposed on said first side. Support can be found in previously presented claim 29.

Claim 57 depends from claim 56, and recites a device further comprising a semi-solid material disposed on the second side. Support can be found in previously presented claim 30.

Claim 58 depends from claim 50, and recites a device further comprising a pressure sensitive adhesive disposed on the first side. Support can be found in previously presented claim 35.

Claim 59 depends from claim 58, and recites a device further comprising a pressure sensitive adhesive disposed on the second side. Support can be found in previously presented claim 34.

Claim 60 depends from claim 50 and recites a device further comprising a plurality of hydrocarbons disposed on said first side. Support can be found in previously presented claim 32.

Claim 61 depends from claim 60 and recites a device further comprising a plurality of hydrocarbons disposed on said second side. Support can be found in previously presented claim 33.

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No new matter has been entered. Reexamination and reconsideration of the application, as amended, is respectfully requested.

Claim 22 stands rejected under Section 112, second paragraph, as being indefinite.

Claim 22 has been rewritten as new independent claim 50 to address this rejection.

Claims 22 - 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either Yamaguchi (USPN 6,046,907) in view of Ameen et al. (USPN 5,545,473).

Yamaguchi teaches a heat conductor comprising a heat conductive layer 10 and a potentially adhesive layer 20 formed of a film 21 and a thermally conductive hot melt layer 22, where composite layer 20 is disposed on only one side of the heat conductive layer. Col. 1 / Line 61 - Co. 2 / Line 1, FIGs. 1, 2A, 2B, 3A, 3B. In operation, as the temperature of the heat conductor increases, the “potentially adhesive layer” softens and functions as an adhesive. Yamaguchi nowhere teaches or suggests fully encapsulating his heat conductor 10.

The Examiner cites Ameen et al. at Col. 2 / Lines 28-43 as teaching use of “thermally conductive epoxy or other non-silicone polymeric film to form useful coatings and encapsulation of electronic solid state devices and other substrates as a method for increasing heat dissipation.” Office Action at Paragraph 3.

“The initial burden of establishing a basis for denying patentability to a claimed invention rests upon the examiner. *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984). In establishing a *prima facie* case of obviousness under 35 USC 103, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. *Ex parte Clapp*, 227 USPQ 972 (BPAI 1985). There are two (2) separate and

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distinct elements to this requirement. First, the combination of the reference teachings relied upon by the Examiner must teach, or at the very least suggest, all the claim limitations of the claim at issue. Second, there must be some motivation to make the combination of references relied upon by the Examiner.

Applicants' claim 50 recites a device comprising a flexible thermally conductive member encapsulated with a polyethylene layer. Polyethylene has an extremely low thermal conductivity. Attachment A hereto comprises a data sheet for polyethylene. Page 3 of Attachment A recites the thermal conductivity for polyethylene as  $0.41 - 0.51 \text{ Watts / m } ^\circ\text{K}$ . Attachment B hereto comprises a second data sheet for polyethylene. Page 3 of Attachment B recites a maximum thermal conductivity for polyethylene of  $11.0 \text{ in units } 10^4 \text{ cal-cm/sec-cm}^2 \cdot ^\circ\text{C}$ , which converts to  $0.46 \text{ Watts / m } ^\circ\text{K}$ . Attachment C hereto comprises a third data sheet for polyethylene. Page 2 of Attachment C recites a thermal conductivity for polyethylene of  $10.06 \text{ times } 10^{-4} \text{ cal/sec-cm } ^\circ\text{C}$ , which converts to  $0.42 \text{ Watts / m } ^\circ\text{K}$ .

As the Examiner correctly notes, Ameen et al. teach use of various resins and greases to increase thermal conductivity. Ameen et al. teach "most commercially available products can produce a conductivity in the range of only about  $1.8 \text{ W/M } ^\circ\text{K}$ . (for greases) to  $2.2 \text{ W/M } ^\circ\text{K}$  (for epoxies). Even the most advanced (and expensive) materials, such as silver filled epoxies, can achieve a conductivity in the range of  $3-4 \text{ W/M } ^\circ\text{K}$ ." Col. 2 / Lines 28-34. Needless to say, Ameen et al. nowhere teach or suggest use of an encapsulant having a thermal conductivity of about  $0.5 \text{ W/M } ^\circ\text{K}$  or less, such as polyethylene. Rather, Applicants respectfully submit that Ameen et al. teach away from using an encapsulant such as polyethylene.

In summary, Applicants respectfully submit that Yamaguchi nowhere teaches or

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suggests fully encapsulating his heat conductor 10. For example, nowhere in his FIGs. 1, 2A, 2B, 3A, 3B, or 4, does Yamaguchi show a fully encapsulated heat conductor 10. Moreover Applicants further respectfully submit that Ameen et al. teach away from encapsulating a heat conductor with a low thermal conductivity encapsulant such as polyethylene. This being the case, Applicants respectfully submit that claim 50 is patentable over the combined teachings of Yamaguchi and Ameen et al.

Claims 51 - 61 depend, directly or indirectly, from claim 50. Under 35 U.S.C. § 112, dependent claims are construed to contain all of the limitations of the independent claim from which they depend in addition to their own limitations. "If an independent claim is nonobvious under 35 USC 103, then any claim depending therefrom is nonobvious. MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed.Cir. 1988). Therefore, Applicants respectfully submit that claims 51 through 61 are patentable over the teachings of Yamaguchi in view of Ameen et al..

Having dealt with all of the outstanding objections and/or rejections of the claims, Applicants submit that the application as amended is in condition for allowance, and an allowance at an early date is respectfully solicited. In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account No. 502262.

Respectfully submitted,



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